



NIH BACKGROUNDER

National Institutes of Health

Exploratory Centers for Interdisciplinary Research

As part of the NIH Roadmap for Medical Research, more than \$36 million will be awarded to fund 21 Exploratory Centers for Interdisciplinary Research. This trans-NIH initiative, managed by the National Center for Research Resources (NCRR), seeks to lower artificial barriers that divide biomedical researchers and impede scientific progress.

Biomedical research traditionally has been organized much like a series of cottage industries, lumping researchers into broad areas of scientific interest and then grouping them into distinct, departmentally based specialties. To remove these organizational barriers and advance science, the new specialized centers will make it easier for scientists to conduct interdisciplinary research and will help them to forge new disciplines from existing ones. By engaging seemingly unrelated disciplines, traditional gaps in terminology, approach and methodology will also be gradually eliminated.

Removing Roadblocks to Collaboration

“With these new Exploratory Centers, we hope to remove roadblocks to collaboration so that a true meeting of minds can take place that will broaden the scope of investigation, yield fresh and possibly unexpected insights, and create solutions to biomedical problems that have not been solved using traditional, disciplinary approaches,” said NIH Director Elias A. Zerhouni, M.D.

Providing Sustained Support

Through the NIH Roadmap, initial funding is provided for three years to support planning activities for the interdisciplinary centers. This is intended to lay the foundation and prepare investigators to submit a subsequent application for substantial, long-term support through an Interdisciplinary Research Consortium.

“By providing this sustained and systematic support to interdisciplinary research through these new Exploratory Centers, we hope scientists can make progress on some of the more complex biomedical issues we face,” said Lawrence Tabak, D.D.S., Ph.D., Director of the National Institute of Dental and Craniofacial Research, who—together with Patricia A. Grady, Ph.D., R.N., F.A.A.N., Director of the National Institute of Nursing Research and Kenneth Olden, Ph.D., Director of the National Institute of Environmental Health Sciences—co-chairs the NIH Roadmap Interdisciplinary Research Working Group. “Integrating different disciplines in entirely new ways holds the promise of opening up currently unimagined avenues of scientific inquiry and, in the process, forming whole new disciplines.”

Addressing Varied Medical Problems

Exploratory Centers for Interdisciplinary Research will address problems as varied as antimicrobial resistance, diabetes, insect-borne diseases, obesity, asthma, and new directions in stroke neurorehabilitation.

EXAMPLES OF THE EXPLORATORY CENTERS FOR INTERDISCIPLINARY RESEARCH:

Controlling Mosquito-Borne Diseases

Insect-borne diseases like malaria, dengue fever and West Nile virus are a major public health problem in many urban areas around the world. Principal Investigator Dr. John Beier is going to establish partnerships between faculty at the **University of Miami** and international collaborators to study the ecology and control of mosquito-borne diseases at seven cities in East Africa, the Middle East, and the Latin America-Caribbean region. Poverty, urban farming, water and sanitation availability, increased population movement, deteriorating infrastructures, overcrowding in urban areas, and natural disasters all contribute to the development of conditions that modify the natural habitats of insects. This Exploratory Center, **Vector-Borne Disease Control in Urban Environments**, will include experts in remote sensing, virologists, biologists, mathematicians, entomologists, engineers, environmental scientists, economists, epidemiologists, historians, biophysicists, and specialists from the area of public health.

Attacking the Obesity Epidemic

Three of the new Exploratory Centers for Interdisciplinary Research will form new groupings of disciplines to attack obesity, one of America's most urgent public health problems. Dr. Barry Popkin at the **University of North Carolina at Chapel Hill** plans to engage researchers from nutrition, epidemiology, health behavior, urban planning, health economics, physiology, psychology, genetics, and clinical medicine to develop an Exploratory Center, **An Interdisciplinary Strategy for Obesity**. Leading scholars in seven overlapping topical clusters will meet on a regular basis to develop a common language, identify needs, and design and plan specific research projects.

At the **University of Texas Southwestern Medical Center at Dallas**, Dr. Jay Horton will bring together diverse groups of investigators to research the behavioral, metabolic, and molecular events that cause obesity. The major focus of his effort will be on the brain and liver, organs that both play central roles in the development of obesity and its adverse metabolic consequences. This group, the **Taskforce for Obesity Research at Southwestern**, will study how the brain regulates food intake and energy expenditure, and will reveal how dysregulation of glucose and lipid metabolism in the liver contributes to obesity.

Finally, Dr. Adam Drewnowski at the **University of Washington in Seattle** will develop a center to address biomedical, public health, and policy aspects of the obesity epidemic. The hypothesis behind this center, **An Exploratory Center for Obesity Research**, is that the social problem of obesity can only be solved using an interdisciplinary approach that blends biomedical research with broader social, economic, environmental, and policy concerns. His "Lab to

Leadership" model will allow sustained interactions among researchers, clinicians, public health professionals, local and state government agencies, policy makers, and communities at risk.

Reducing the Nation's Health Disparities

Dr. Scott Ransom at the **University of Michigan in Ann Arbor** is going to lead an interdisciplinary team in an attempt to develop new strategic approaches to reduce one of the most stubborn and persistent health disparities in the nation — racial disparities in the outcome of pregnancy. His Center, **Health Disparities: Leaders, Providers and Patients**, will develop an optimal infrastructure to support interdisciplinary research into the problem, develop testable hypotheses for new and more effective approaches, and provide an effective mechanism for communicating research-based information to caregivers and patients.

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